

APPLICANT(S): KRITCHMAN, Eliahu M. et al.
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AMENDMENTS TO THE CLAIMS

Please amend the claims to read as follows, and cancel without prejudice or disclaimer to resubmission in a divisional or continuation application claims 31-57 indicated as cancelled:

1. (Currently amended) A method for building three-dimensional objects, said method comprising:

dispensing a first material used to form at least the three-dimensional object;
dispensing a second material used to form at least part of a support structure; and
dispensing a ~~third material~~ release layer between said 3-D object and said support structure ~~to form a release layer~~.

2. (Original) The method of claim 1 wherein at least said first material is a photopolymer and at least the three-dimensional object is formed after being irradiated by electromagnetic radiation.

3. (Original) The method of claim 1 wherein said second material is a photopolymer and the support structure is formed after being irradiated by electromagnetic radiation.

4. (Currently amended) The method of claim 1 wherein said ~~third material~~ release layer is a photopolymer and ~~the release layer~~ is formed after being irradiated by electromagnetic radiation.

5. (Original) The method of claim 1 wherein said support structure comprises said first material.

6. (Currently amended) The method of claim 1 wherein said ~~second support structure~~ and ~~third materials~~ said release layer are formed from the same ~~substance~~ material.

7. (Original) The method of claim 1 wherein said release layer is softer than said support structure, and said support structure is softer than said 3-D object.

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8. (Original) The method of claim 1 comprising separating said support structure and release layer from said 3-D object thereby to produce a three dimensional object comprised of said first material.

9. (Original) The method according to claim 1, comprising subjecting said second material to a solvent or to radiation thereby to cause the support structure to weaken.

10. (Original) The method according to claim 1, wherein said support structure and release layer are at least partly liquid or paste after curing.

11. (Currently amended) The method according to claim 1, where said support structure comprises a container capable of confining said ~~support~~ second material.

12. (Original) The method according to claim 1, further comprising constructing at least one support pillar of said first material within said support structure.

13. (Original) The method according to claim 12, further comprising constructing at least one connecting membrane of first material attached to said at least one support pillar.

14. (Currently amended) A system for building three-dimensional objects, said system comprising:

a controller; and

a jetting head capable of selectively dispensing:

a first material used to form at least the three-dimensional object;

a second material used to form at least part of a support ~~structure;~~ structure,
and a release layer

~~a third material~~ between said 3-D object and said support structure ~~used to~~
~~form a release layer.~~

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15. (Original) The system of claim 14 wherein at least said first material is a photopolymer and at least the three-dimensional object is formed after being irradiated by electromagnetic radiation.

16. (Original) The system of claim 14 wherein said second material is a photopolymer and the support structure is formed after being irradiated by electromagnetic radiation.

17. (Currently amended) The system of claim 14 wherein said ~~third material~~ release layer is a photopolymer and ~~the release layer~~ is formed after being irradiated by electromagnetic radiation.

18. (Original) The system of claim 14 wherein said support structure comprises said first material.

19. (Original) The system of claim 14, wherein said support structure and release layer are at least partly liquid or paste after curing.

20. (Original) The system of claim 14, where said support structure comprises a container capable of confining said support material.

21. (Currently Amended) A method for building three-dimensional objects, said method comprising:

dispensing a curable build material to form the 3-D object ~~and part of the support structure~~;

dispensing a support material to form at least part of ~~[[the]]~~ a support structure, the build material being solid after curing and the support material being liquid after curing; and

selectively dispensing a material to form ~~forming a support structure~~ ~~comprising~~ a container capable of holding said support material

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22. (Original) The method according to claim 21, wherein said container comprises a base, a plurality of walls and an open top.

23. (Currently amended) The method according to claim [[21]] 22, wherein said container comprises at least one nib projecting from at least one of said walls, wherein said at least one nib is capable of restraining the movement of a three dimensional object.

24. (Original) The method according to claim 21, wherein said container comprises build material.

25. (Original) The method according to claim 21, wherein each of said build material, support material and container are formed in layers.

26. (Currently Amended) A system for building three-dimensional objects, said system comprising:

a controller; and

a material dispenser capable of selectively dispensing:

a curable build material to form the 3-D object and part of a support structure; and

a support material to form part of the support structure, the build material being solid after curing and the support material being liquid after curing; wherein the material dispenser is capable of ~~forming~~ selectively dispensing material to form a support structure comprising a container capable of holding said support material.

27. (Original) The system according to claim 26, wherein said container comprises a base, a plurality of walls and an open top.

28. (Original) The system according to claim 26, wherein said container comprises at least one nib projecting from at least one of said walls, wherein said at least one nib is capable of restraining the movement of a three dimensional object.

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29. (Original) The system according to claim 26, wherein said container material is identical to said build material.

30. (Original) The system according to claim 26, wherein each of said build material, support material and container material are deposited in layers.

31. (Currently amended) A method for building three-dimensional objects, said method comprising:

dispensing a build material; and

dispensing a build material and a second material which in combination form forming a support structure, said support structure comprising a plurality of fine pillars surrounded by said second material; and

~~constructing a support pillar to support an object comprised of said build material.~~

32. (Original) The method according to claim 31, comprising constructing membranes connected to said support pillar.

33. (Original) The method according to claim 31, wherein said at least one support pillar is comprised of said build material.

34. (Original) The method according to claim 31, wherein said at least one support pillar is comprised of said build material and said second material.

35. (Original) The method according to claim 31, wherein said at least one support pillar comprises a plurality of layers and wherein the topmost layer of said at least one support pillar is adjacent to an object being supported

36. (Original) The method according to claim 31, wherein said upper portion of said at least one support pillar is tapered.

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37. (Original) The method according to claim 31, wherein each of said build material, second material and pillar are deposited in layers.

38. (Original) The method according to claim 31, wherein the topmost layer of said at least one support pillar comprises said second material.

39. (Original) The method according to claim 31, wherein the topmost layer of said at least one support pillar comprises a third material, said third material being softer than the material forming the remainder of said at least one support pillar.

40. (Currently amended) A system for building three-dimensional objects, said system comprising:

a dispenser capable of dispensing:

a build material;

a second material ~~forming~~ forming, in combination with said build material, a support structure; said support structure comprising a plurality of fine pillars surrounded by said second material and

~~said dispenser constructing a support pillar to support an object comprised of said build material.~~

41. (Original) The system according to claim 40, wherein said dispenser is capable of material forming dispensing constructing membranes connected to said support pillar.

42. (Original) The system according to claim 40, wherein said at least one support pillar is comprised of said build material.

43. (Currently amended) The system according to claim 40, wherein said at least one support pillar is comprised of said build material and said ~~second~~ support material.

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44. (Original) The system according to claim 40, wherein said at least one support pillar comprises a plurality of layers and wherein the topmost layer of said at least one support pillar is adjacent to an object being supported.

45. (Currently amended) The system according to claim 40, wherein the topmost layer of said at least one support pillar comprises said ~~second~~ support material.

46. (Original) The system according to claim 40, wherein the topmost layer of said at least one support pillar comprises a third material, said third material being softer than the material forming the remainder of the pillar.

47. (Original) The system according to claim 40, wherein said upper portion of said at least one support pillar is tapered.

48. (Currently amended) The system according to claim 40, wherein each of said build material, ~~second~~ support material and pillar are deposited in layers.

49. (Currently amended) A method for building three-dimensional objects, said method comprising:

dispensing a first material for the construction of the three-dimensional object;
selectively dispensing a support material forming a support structure for supporting said three-dimensional object; and
inserting a support insert.

50. (Original) The method of claim 49 wherein the support insert comprises a third material.

51. (Original) The method of claim 49 wherein the support insert includes plastic.

52. (Original) The method of claim 49 wherein the support insert includes metal.

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53. (Original) The method of claim 49 wherein the support insert is a plate shaped member.

54. (Original) The method of claim 49 wherein the support insert is a skewed member.

55. (Original) The method of claim 49 wherein the support insert includes at least threads.

56. (Original) The method of claim 49 wherein the support insert is flexible.

57. (Original) The method of claim 49 wherein the support insert is more rigid than the support material, after said support material is cured.

58. (Currently Amended) A system for building three-dimensional objects, said system comprising:

- a build material jetting means for dispensing build material;
- a support material jetting means for dispensing support material; and
- a release material jetting means for dispensing release material between said ~~built~~ build and support materials.

59. (Currently amended) A system for building three-dimensional objects, said system comprising:

- a controller means;
- a material dispenser means for selectively dispensing:
 - build material having a first modulus of elasticity;
 - container material having a second modulus of elasticity; and
 - support material having a third modulus of elasticity and being held in a container comprised of said container material.

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60. (Currently amended) A system for building three-dimensional objects, said system comprising:

a dispenser means for dispensing:

a build material; and

a second material ~~forming~~ forming, in combination with said build material, a support structure; said support structure comprising a plurality of fine pillars surrounded by said second material and

~~said dispenser means constructing a support pillar to support an object comprised of said build material.~~